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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,623	12/27/2000	Satoshi Mori	MAEJ-136	3428

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EXAMINER	
ZIMMER, MARC S	
ART UNIT	PAPER NUMBER

1712

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No. 09/720,623		Applicant(s) MORI ET AL.	
Examiner Marc S. Zimmer		Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2004.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9 and 11 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 11 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As claim 11 is written, it would appear that Applicant contemplated a method wherein the ratio recited in lines 5 and 6 of the claim may be adjusted subsequent to reacting the phenolic compound and the unsaturated cyclic hydrocarbon. In fact, this ratio is manipulated by way of judicious selection of the reaction conditions prior to/during the reaction. The only way this ratio could be adjusted after the reaction has taken place is presumably by selective removal of a portion of the desired resin or by-product from the mixture leaving behind fractions of the resin and by-product that meet this requirement. This is not mentioned anywhere in the original disclosure hence the invention set forth in new claim 11 represents new matter.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 3-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The language of claim 1 is so awkward as to elicit questions as to what Applicant regards as their invention. First of all, the first step of the claimed method refers to an adjustment of the molar ratio of a mixture of *products* when a reaction step has not yet been formally stated. It is submitted that Applicant should consider replacing the language of step 1 with the following taken nearly verbatim from page 7 of the Specification:

step (1) cause the phenolic compound and unsaturated cyclic hydrocarbon having two or more carbon-carbon double bonds to react so that the molar fraction of the amount of ether-type product relative to that of the mixture of products may be 0.1 or more.

Concerning the description of the second step, it refers to "said reaction" where, again, a reacting step had not been previously disclosed except for in the preamble. Also, the term "proceeding" is too vague as to convey what is actually required for "extinguishing" of the ether by-product (which the Examiner hypothesizes is not decomposed in the second step but, rather, rearranges, to provide more of the desired resin- ultimately the mechanism by which the by-product is extinguished is not delineated). In reality, the "extinguishing" step entails heating the system to even higher temperatures than those employed in step 1. The claim should be amended to reflect this fact. Correction of these matters is required.

### ***Claim Analysis***

Claim 1 refers to an adjusting step that yields a specified product distribution. In actuality, there does not appear to be any pro-active measures taken to achieve the

required result. That is, it would appear that the outcome of the reaction wherein the ether represents more than 10 mol% of the final product is inherent in the conditions that are used. Therefore, if a reference teaches reactions conditions mirroring those presently disclosed, i.e. similar reactants, catalyst, and reaction temperature (in general, a phenolic compound, a cycloalkadiene compound, a boron trifluoride catalyst, and reaction temperature of 60° to 90° C), it will be held as evidence that the product inherently contains the stated product distribution.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Bogan, U.S. Patent # 4,927,905. Example 1 teaches identical starting materials, a first reaction temperature that falls inside the range for step 1 (see claim 2), and a second reaction temperature to which the system is raised upon completion of dicyclopentadiene addition that, likewise, falls within the temperature range mandated for the second step. Neutralization/deactivation of the catalyst with KOH is taught under heading B. of the example as is a high temperature vacuum-stripping step that would inherently result in the removal of the excess phenol which has a boiling point of 180° C at atmospheric pressure.

***Allowable Subject Matter***

Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Although it is frequently the case that phenolic resins are prepared expressly as precursors to epoxy resins, there simply is no particular motivation to extend the methodology disclosed by Bogan to include modification of the phenol-hydrocarbon resin with an epihalohydrin. Claim 10 is allowable for the same reason.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1712

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 11, 2004

*Marc Zimmer*

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*AU 1712*